HEPATITIS C – ACUTE AND CHRONIC
(initial diagnosis only)

DISEASE REPORTING

In Washington

DOH receives approximately 25 to 65 reports of non-A, non-B hepatitis infections per year, the majority of which are caused by hepatitis C virus (HCV). Non-A, non-B hepatitis is no longer notifiable, however, acute and chronic infections with hepatitis C became reportable in 2000.

An estimated 100,000 people in Washington State may be infected with hepatitis C and about 250 deaths occur each year as a result of hepatitis C infection. Approximately 7,000 case reports for chronic hepatitis C have been recorded at DOH since reporting was initiated in December 2000. The majority have been reported based on a positive antibody test.

Purpose of reporting and surveillance

- To identify sources of transmission (e.g., an infected health care worker) and to prevent further transmission from such sources.
- To identify cases that may be a source of infection for others (e.g., a sexual or drug contact) and to prevent further disease transmission from such sources.
- To better understand the epidemiology of HCV and the burden of morbidity from chronic infection.
- To make recommendations about and advocate for resources for HCV treatment and targeted HCV screening.

Reporting requirements

- Health care providers: notifiable to Local Health Jurisdiction within one month
- Hospitals: notifiable to Local Health Jurisdiction within one month
- Laboratories: no requirements for reporting
- Local health jurisdictions: notifiable to DOH within 7 days of case investigation completion or summary information required within 21 days –
    - Acute HCV: Communicable Disease Epidemiology
    - Chronic HCV: Infectious Disease and Reproductive Health

ACUTE HEPATITIS C

Clinical criteria for diagnosis

An illness with a) discrete onset of symptoms consistent with viral hepatitis and , b) jaundice or elevated serum aminotransferase levels.

Laboratory criteria for diagnosis

- Serum aminotransferase levels >7 times the upper limit of normal, and
- Immunoglobulin M (IgM) anti-HAV negative, and
- IgM anti-HBc negative or HbsAg negative, and
- Anti-HCV positive (repeatedly reactive) by enzyme immunoassay (EIA), verified by an additional, more specific assay (e.g., RIBA for anti-HCV or reverse transcriptase polymerase chain reaction (RT-PCR) for HCV RNA, OR anti-HCV by RIBA alone, OR HCV RNA positive alone.

Case definition

- Confirmed: A case that meets the clinical case definition and is laboratory confirmed.

CHRONIC HEPATITIS C

Clinical criteria for diagnosis

Most HCV-infected persons are asymptomatic. However, many have chronic liver disease, which can range from mild to severe including cirrhosis, and/or liver cancer.

Laboratory criteria for diagnosis

- Anti-HCV positive (repeat reactive) by EIA, verified by an additional more specific assay (e.g., RIBA for anti-HCV or RT-PCR for HCV RNA), or
- Anti-HCV positive (repeat reactive) by EIA with average signal to cut-off ratio ≥3.8., or
- Anti-HCV positive by RIBA alone, or
- HCV RNA positive.

Case definition

- Probable. A case that is anti-HCV positive (repeat reactive) by EIA and has alanine aminotransferase (ALT or SGPT) values above the upper limit of normal, but the anti-HCV EIA result has not been verified by an additional more specific assay or the signal to cut-off ratio is unknown.
- Confirmed. A case that is laboratory confirmed.

A. DESCRIPTION

1. Identification

Onset is usually insidious, with anorexia, vague abdominal discomfort, nausea and vomiting; progression to jaundice is less frequent than with hepatitis B. Although initial infection may be asymptomatic (more than 90% of cases) or mild, a high percentage (between 50% and 80%) will develop a chronic infection. Of these chronically infected persons, about half will eventually develop cirrhosis or cancer of the liver.

Diagnosis depends on detecting antibody to the hepatitis C virus (anti-HCV). As of the late 1990s, the only tests approved in the US for diagnosis of HCV infection are those that measure anti-HCV. These tests detect anti-HCV in up to 97% of infected patients, but do not distinguish between acute, chronic, or resolved infection. As with any screening test, positive predictive value of EIA for anti-HCV varies depending on prevalence of infection in the population and is low in populations with an HCV prevalence of less than 10%. Supplemental testing with a more specific assay (i.e., recombinant immunoblot assay [RIBATM]) of a specimen with a positive EIA result limits reporting of false-positive results. Supplemental test results might be positive, negative or indeterminate. An anti-HCV positive person is defined as one whose serologic results are EIA test positive and supplemental test positive. Persons with a negative EIA test result or a positive EIA and a negative supplemental test result are considered uninfected, unless other evidence exists to indicate HCV infection (e.g., abnormal ALT levels in immunocompromised persons or persons with no other etiology for their liver disease).

2. Infectious Agent

The hepatitis C virus is an enveloped RNA virus classified as a separate genus (Hepacavirus) in the Flaviviridae family. At least six different genotypes and greater than 90 subtypes of HCV exist. Evidence is limited regarding differences in clinical features, disease outcome or progression to cirrhosis or hepatocellular carcinoma (HCC) among persons with different genotypes. However, differences do exist in responses to antiviral therapy according to HCV genotypes.

3. Worldwide Occurrence

Worldwide distribution. HCV prevalence is directly related to the prevalence of persons who routinely share injection equipment and to the prevalence of poor parenteral practices in health care settings. WHO estimated that as of the late 1990s, about 1% of the world's population were infected with HCV. In Europe and North America the prevalence of hepatitis C is between 0.5% and 2.0%; in parts of Africa prevalence is over 4%. There may be close to 1.5 million persons with HCV infections in Europe and close to 4 million in the US.

4. Reservoir

Humans; virus has been transmitted experimentally to chimpanzees.

5. Mode of Transmission

HCV is primarily parenterally transmitted. Sexual transmission has been documented to occur but is far less efficient or frequent than the parenteral route.

6. Incubation period

Ranges from 2 weeks to 6 months; commonly 6-9 weeks. Chronic infection may persist for up to 20 years before the onset of cirrhosis or hepatoma.

7. Period of communicability

From one or more weeks before onset of the first symptoms; may persist in most persons indefinitely. Peaks in virus concentration appear to correlate with peaks in ALT activity.

8. Susceptibility and resistance

Susceptibility is general. The degree of immunity following infection is not known; repeated infections with HCV have been demonstrated in an experimental chimpanzee model.

B. METHODS OF CONTROL

1. Preventive measures:

General control measures against HBV infection apply (see Hepatitis B, section B1). Prophylactic IG is not effective. In blood bank operations, all donors should be routinely screened for anti-HCV. In addition, all donor units with elevated liver enzyme levels and those positive for anti-HBc should continue to be discarded. Routine virus inactivation of plasma derived products, risk reduction counseling for persons uninfected but at high risk (i.e., health care workers) and nosocomial control activities need to be maintained.

2. Control of patient, contacts and the immediate environment:

General control measures against HBV apply. Available data suggest that postexposure prophylaxis with IG is not effective in preventing infection. Interferon alpha therapy has been shown to have an overall beneficial effect in about 25% of chronic hepatitis C cases; corticosteroids and acyclovir have not been effective. Studies in patients receiving a combination of ribavirin and interferon have demonstrated a substantial increase in sustained response rates reaching 40%-50%. However, both of these medications have

significant side effects that require careful monitoring. Ribavirin is a teratogen; thus pregnancy should be avoided during therapy.

3. Epidemic measures

When two or more cases occur in association with some common exposure, conduct a search for additional cases. Institute strict aseptic techniques. If a plasma derivative such as antihemophilic factor, fibrinogen, pooled plasma or thrombin is implicated, withdraw the lot from use and trace all recipients of the same lot in a search for additional cases.

4. International measures

Ensure adequate virus inactivation for all internationally traded biological products.